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09/342,824	06/29/1999	PETER J. WILK	W07-426	7142
7590	01/11/2006		EXAMINER	
COLEMAN SUDOL SAPONE, P.C. 714 COLORADO AVENUE BRIDGEPORT, CT 06605-1601			MANTIS MERCADER, ELENI M	
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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

MAILED

Application Number: 09/342,824

JAN 11 2006

Filing Date: June 29, 1999

Group 3700

Appellant(s): WILK, PETER J.

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R. Neil Sudol  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 10/31/2005 appealing from the Office action mailed 06/28/2005.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

4,315,514	DREWES	2-1982
5,871,446	WILK	2-1999
5,526,815	GRANZ ET AL.	6-1996

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Drewes et al.'514.

Drewes et al.'514 teach a method for treating cancer comprising:

detecting a tumor in a patient (col. 5, lines 5-32) and applying mechanical pressure waves to said tumor at a mechanical resonance frequency of said tumor to effectively destroy said tumor (col. 7, lines 13-55). In col. 7, lines 13-55 the Drewes et al.'514 reference clearly teaches that the determination of the appropriate treatment resonance frequency is achieved for a plurality of cells 32 rather than an individual cell, and furthermore based on this determination the destruction of the entire tumor 30 is achieved by application of the energy at tumor 30 as a unitary body which is composed of a plurality of cells.

Claims 1-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilk'446 in view of Granz et al.'815 and further in view of Drewes et al.' 514.

Wilk'446 teaches the use of a perforated flexible web with electroacoustic transducers attached to the web, an ac current source being connected to the transducer for energizing the transducer with an electrical signal of a pre-established ultrasonic frequency to produce a first pressure wave (col. 8, lines 50-61 and col. 9, lines 39-45) and electroacoustic transducers

connected to an analyzing component is attached to the electroacoustic transducer for determining three dimensional shapes of internal organs of the patient by analyzing signals generated by the electroacoustic transducers in response to second pressure waves produced at internal organs of the patient in response to the first pressure wave (col. 8, lines 62-67 and col. 9, lines 1-10) while therapy is performed (col. 11, lines 25-29).

Wilk'446 does not teach the use of transducers for not just detection but also for treatment. Granz et al.'815 teaches the use of transducers not only for detection and imaging but also for treatment (col. 1, lines 64-67 and col. 2, lines 1-67). It would have been obvious to one skilled in the art at the time the invention was made to have used the transducers as taught by Granz et al.'815 in the apparatus of Wilk'446 in order to identify with more precision the area of interest and therefore position exactly the effective region of therapeutic waves (as taught in Granz et al.'815 col. 1, lines 54-59) as well as eliminate the use of invasive probes for treatment.

Wilk'446 in view of Granz et al.'815 do not teach the use of the transducers for detecting resonant frequencies of selected cells and using a destructive frequency for the selected cells as a way of treatment. Drewes et al.'514 teach the use of the transducers for detecting resonant frequencies of selected cells and using a destructive frequency for the selected cells as a way of treatment (col. 1, lines 59-68; col. 2, lines 1-68 and col. 3, lines 1-62). It would have been obvious to one skilled in the art at the time the invention was made to have used the transducers of Wilk'446 in view of Granz et al.'815 to detect resonant frequencies of selected cells and use a destructive frequency for the selected cells as a way of treatment as taught by Drewes et al.'514 as an alternative way to treat the area of interest.

**(10) Response to Argument**

Appellant's arguments filed on 10/31/2005 have been fully considered, but the Examiner respectfully disagrees.

**A. Rejection of Independent Claim 1 Under 35 U.S.C. 102(b)**

The Appellant argues that Drewes et al.'514 do not teach the limitation of "a mechanical resonance frequency of the entire tumor as a unitary body". However as stated in col. 7, lines 13-55, Drewes et al.'514 clearly teaches that the determination of the appropriate treatment resonance frequency is achieved **for a plurality of cells 32** rather than an individual cell, and furthermore based on this determination **the destruction of the entire tumor 30** is achieved by application of the energy at tumor 30 as a unitary body which is composed of a plurality of cells.

**B. Rejection of Claims 1-28 Under 35 U.S.C. 103(a)**

Regarding claims 1, 17 and 23, the Appellant argues that the limitation of "a mechanical resonance frequency of the entire tumor as a unitary body" is not taught by any of the cited references. However as stated in col. 7, lines 13-55, Drewes et al.'514 clearly teaches that the determination of the appropriate treatment resonance frequency is achieved **for a plurality of cells 32** rather than an individual cell, and furthermore based on this determination **the destruction of the entire tumor 30** is achieved by application of the energy at tumor 30 as a unitary body which is composed of a plurality of cells. Therefore, Drewes et al.'514 does in fact teach the limitation.

With respect to the rest of the references used, Applicant argues the references individually, which is inappropriate in a 35 U.S.C. 103(a) rejection. In response to applicant's

arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). The remaining references of the 103(a) rejection, Wilk'446 and Granz et al.'815 were not used to show use of a “a mechanical resonance frequency of the entire tumor as a unitary body” but rather the rest of the elements of the claims as cited in the rejection, namely the perforated flexible web with the electroacoustic transducers along with the production of the first and second pressure waves for determining three-dimensional shapes of internal organs while therapy is performed (in Wilk'446 please see col. 8, lines 50-61 and 62-67 and col. 9, lines 1-10 and 39-45 as well as col. 11, lines 25-29) and the use of transducers not only for detection but also for treatment in order to increase the precision of identification of the area of interest and thereby more effectively treat (in Granz et al.'815 please see col. 1, lines 54-59) as well as elimination of the invasive probes. Finally Drewes was introduced for the specific application of treatment utilizing a mechanical resonance frequency of the entire tumor as a unitary body.

Further regarding claim 17, the claim does not recite the limitation “automatically” or “*in vivo*” use for determining the appropriate frequency for treatment. One skilled in the art at the time of the invention was made would readily recognize that the use of a processor in the ultrasonic imaging art is required in that it is impossible to image without a processor. Finally regarding claim 23, the use of additional further pressure waves still yields the determination of three-dimensional structures as taught by Wilk'446 regardless that an additional pressure wave is being utilized. Whether a first and second pressure wave or a first, second and third pressure wave is used is irrelevant because both combinations of waves yield the same end result of

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determining the three dimensional shapes of internal organs, thereby constituting functional equivalents.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,  
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